What is claimed is:

1. A method of detecting expression of genes in the skin, comprising:

a) applying an adhesive tape to a target area of the skin in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules, wherein the tape comprises a rubber adhesive, and wherein the tape is pliable; and

b) detecting the nucleic acid molecules in the epidermal sample, thereby detecting expression of genes in the skin.

2. The method of claim 1, wherein the tape comprises a rubber adhesive on a polyurethane film.

3. The method of claim 1, wherein about one to ten adhesive tapes are applied and removed from the skin.

4. The method of claim 1, wherein about one to eight adhesive tapes are applied and removed from the skin.

5. The method of claim 1, wherein about one to five adhesive tapes are applied and removed from the skin.

6. The method of claim 1, wherein the nucleic acid molecules are applied to a microarray to detect the nucleic acid molecules.

7. The method of claim 1, wherein altered expression is detected by detecting a difference in a $\Delta$Ct value, wherein a $\Delta$Ct value is a difference in the number of amplification cycles required to reach a threshold signal level between a target nucleic acid molecule and a control nucleic acid molecule.

8. A method for detecting a response of a subject to treatment for a skin disease or pathological skin state, comprising:

a) treating the subject for the skin disease or pathological skin state;

b) applying an adhesive tape to the skin of the subject in a manner sufficient to isolate an epidermal sample, wherein the epidermal sample comprises nucleic acid molecules; and

c) detecting a target nucleic acid molecule in the sample comprising nucleic acid molecules, wherein expression of the target nucleic acid molecule is informative regarding the skin disease and pathological skin states, thereby detecting a response of the subject to treatment for the skin disease or pathological skin state.

9. The method of claim 8, wherein the method is performed prior to treatment and after treatment.

10. The method of claim 9, wherein the skin disease or pathological skin state is psoriasis.

11. The method of claim 10, wherein the target nucleic acid molecule encodes a protein selected from TNFα, IFNγ, IL-12B, NPF, or IL-23B

12. The method of claim 10, wherein the target nucleic acid molecule encodes a protein selected from CD2, TNFα, or IFNγ.

13. The method of claim 12, wherein a decrease in expression of the target nucleic acid molecule after treatment compared to before treatment is indicative of positive response to treatment.

14. The method of claim 9, wherein a population of genes are detected.

15. The method of claim 14, wherein the detection is performed using a microarray.

16. The method of claim 9, wherein the skin disease or pathological skin state is dermatitis.

17. The method of claim 16, wherein the target area of the skin is irritated skin.

18. The method of claim 17, wherein the method detects expression of a keratin 10, keratin 16, or keratin 17 gene product, and wherein an increase in expression is indicative of response to the treatment.

19. The method of claim 17, wherein the method detects expression of a keratin 16 or keratin 17 gene product, and wherein an increase in expression is indicative of response to treatment.

20. A non-invasive method for isolating or detecting nucleic acid molecules from an epidermal sample of a psoriatic lesion of a human subject, comprising:

a) applying an adhesive tape to the psoriatic lesion of the subject in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules; and

b) isolating or detecting the nucleic acid molecule in the epidermal sample.

21. The method of claim 20, wherein the nucleic acid encodes For TNFα, IFNγ, CD2, IL-12B, Krt-16 and IL-23A.

22. The method of claim 21, wherein the nucleic acid encodes a protein selected from CD2, TNFα, and IFNγ.

23. The method of claim 20, wherein between one and ten adhesive tapes are applied to the skin and removed from the skin.

24. The method of claim 20, wherein between one and eight adhesive tapes are applied to the skin and removed from the skin.

25. The method of claim 20, wherein between about one and four adhesive tapes are applied to the skin and removed from the skin.

26. The method of claim 20, wherein the method further comprises taking a biopsy of the psoriatic lesion.

27. The method of claim 26, wherein a nucleic acid sample is obtained from the biopsy, and the nucleic acid from the tape sample and the nucleic acid from the biopsy are analyzed.

28. The method of claim 20, wherein the adhesive tape comprises a rubber adhesive.

29. The method of claim 20, further comprising obtaining a nucleic acid sample from uninvolved epidermal tissue of the human subject.

30. The method of claim 29, wherein the nucleic acid sample is obtained by taking a biopsy of the uninvolved skin.

31. The method of claim 29, wherein the nucleic acid from normal epidermal tissue is obtained by:

a) applying an adhesive tape to skin of the subject in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid and wherein the skin is unaffected by a disease to be tested; and

b) isolating or detecting the nucleic acid from the epidermal sample of the unaffected skin.

32. The method of claim 30, wherein the uninvolved skin is from the upper arm or the upper back.

33. The method of claim 20, wherein the nucleic acid is deoxyribonucleic acid (DNA).

34. The method of claim 20, wherein the nucleic acid is ribonucleic acid (RNA).

35. The method of claim 20, wherein the skin is irritated skin.

36. The method of claim 20, wherein altered expression of the target nucleic acid is detected by detecting a difference in a $\Delta$Ct value before and after treatment, wherein a $\Delta$Ct value is a difference in the number of amplification cycles required to reach a threshold signal level between a target nucleic acid molecule and a control nucleic acid molecule.

37. A method for characterizing psoriasis in a subject, comprising:

a) applying an adhesive tape to a lesion suspected of being a psoriatic lesion on the skin of the subject in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises a target nucleic acid molecule; and

b) detecting the target nucleic acid molecule, wherein the target nucleic acid is different in at least some subjects with psoriasis.

38. The method of claim 37, wherein the target nucleic acid molecule encodes a protein selected from CD2, TNFα, or IFNγ.

39. The method of claim 37, further comprising using the characterizing to determine a choice of treatment or whether to continue treatment.

40. The method of claim 37, wherein an expression profile is detected using a microarray.

41. The method of claim 37, further comprising determining a ΔCt value, wherein a ΔCt value is a difference in the number of amplification cycles required to reach a threshold signal level between a target nucleic acid molecule and a control nucleic acid molecule.

42. A method for diagnosing psoriasis in a human subject, comprising:

a) applying an adhesive tape to a lesion suspected of being a psoriatic lesion on the skin of the subject in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises a target nucleic acid molecule; and

b) detecting the target nucleic acid molecule, wherein an altered expression of the target nucleic acid molecule as compared with expression in an epidermal sample from a sample not having psoriasis is indicative of psoriasis, thereby diagnosing psoriasis of the subject.

43. The method of claim 42, wherein the target nucleic acid molecule encodes a protein selected from TNFα, IFNγ, CD2, IL-12B, Krt-16 and IL-23A.

44. The method of claim 43, wherein two or more target nucleic acid molecules are detected.

45. The method of claim 44, wherein two or more target nucleic acid molecules that encode two or more proteins selected from CD2, TNFα, or IFNγ, are detected.

46. The method of claim 42, wherein a biopsy is taken at the site of the skin.

47. The method of claim 46, wherein a nucleic acid sample is obtained from the biopsy.

48. The method of claim 46, wherein expression of a target nucleic acid molecule encoding a protein selected from CD2, TNFα, or IFNγ, is detected.

49. The method of claim 42, wherein altered expression is detected by comparing expression of the target nucleic acid molecule with expression of a control nucleic acid molecule.

50. The method of claim 49, wherein expression of the target nucleic acid molecule and the control nucleic acid molecule are detected in the same experiment using the same sample volumes and probes.

51. The method of claim 50, wherein altered expression is detected by detecting a difference in a ΔCt value, wherein a ΔCt value is a difference in the number of amplification cycles required to reach a threshold signal level between the target nucleic acid molecule and a control nucleic acid molecule.

52. A method for characterizing skin of an animal subject, comprising:

a) applying an adhesive tape to a target area of skin suspected of comprising irritated skin in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules; and

b) detecting in the epidermal sample, a nucleic acid molecule expressed from a gene listed in Table VII, or any combination thereof, wherein expression of the nucleic acid molecule is altered in irritated skin, thereby characterizing skin of the subject.

53. The method of claim 52, wherein expression of two or more nucleic acid molecules expressed from genes listed in Table VII are detected.

54. The method of claim 53, wherein expression of ten or more nucleic acid molecules expressed from genes listed in Table VII are detected.

55. The method of claim 53, wherein expression of one hundred nucleic acid molecules expressed from genes listed in Table VII are detected.

56. The method of claim 55, wherein the detection is performed on a microarray.

57. The method of claim 52, wherein the nucleic acid molecule is expressed from the genes listed in Table VI.

58. The method of claim 52, wherein the gene is IL-8.

59. The method of claim 52, wherein a test agent is applied to the target area before the adhesive tape is applied.

60. The method of claim 59, wherein the characterization is performed as part of a clinical trial of the test agent.

61. The method of claim 52, wherein the animal subject is a mammal.

62. The method of claim 61, wherein the mammal is a mouse, a rabbit, or a pig.

63. The method of claim 61, wherein the mammalian subject is a human.

64. A method for detecting a change in gene expression, comprising:

a) applying a first adhesive tape to a target area of skin and a second adhesive tape to an unaffected area of the skin, in a manner sufficient to isolate from the target area of the skin and the normal area of the skin, an epidermal sample adhering to the adhesive tape, wherein the epidermal samples comprise nucleic acid molecules; and

b) for each of the target area sample and the normal area sample, amplifying a target nucleic acid molecule and a control nucleic acid molecule and identifying a $\Delta$Ct value by calculating a difference in the number of amplification cycles required to reach a threshold signal level between the target nucleic acid molecule and a control nucleic acid molecule, wherein a difference in the $\Delta$Ct value at the target area versus the normal area is indicative of a change in gene expression of the target nucleic acid molecule at the target area.

65. The method of claim 64, wherein the control nucleic acid molecule is expressed from a housekeeping gene.

66. The method of claim 64, wherein between about one to ten adhesive tape are applied to the control area of the skin and to the target area of the skin.

67. The method of claim 64, wherein between about one to five adhesive tapes are applied to the control area of the skin and to the target area of the skin.

68. The method of claim 64, wherein a population of target nucleic acid molecules is detected.

69. The method of claim 68, wherein the detection is performed using a microarray.

70. The method of claim 64, wherein the target area of the skin is a psoriatic lesion.

71. The method of claim 64, wherein the target area of the skin comprises skin afflicted with dermatitis.

72. The method of claim 64, wherein the target area of the skin is irritated skin.

73. The method of claim 72, wherein the method detects a decrease in expression of a keratin 10, keratin 16, or keratin 17 gene product.

74. The method of claim 72, wherein the method detects a decrease in expression of a keratin 16 or keratin 17 gene product.

75. A method for identifying a pattern of nucleic acid molecule expression indicative of a disease or pathological state of a human subject, the method comprising:

a) applying an adhesive tape to an area of skin afflicted with the disease or pathological state and to an unaffected area, in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal samples comprise nucleic acid molecules;

b) applying RNA molecules obtained from the sample to a microarray; and

c) determining expression levels of at least 10 genes using the microarray;

wherein an altered expression level in the disease or pathological skin state sample for each of the at least 10 genes as compared with expression in the unaffected skin sample identifies skin afflicted with the disease or pathological state, thereby identifying the pattern of nucleic acid molecule expression indicative of the disease or pathological state.

76. The method of claim 75, wherein expression levels of at least 100 genes are determined on the microarray.

77. The method of claim 75, wherein expression levels of at least 1000 genes are determined on the microarray.

78. The method of claim 75, wherein expression levels of at least 10000 genes are determined on the microarray.

79. The method of claim 75, wherein about one to ten adhesive tapes are applied and removed from the skin.

80. The method of claim 75, wherein about one to eight adhesive tapes are applied and removed from the skin.

81. The method of claim 75, wherein one to five adhesive tapes are applied to the skin.

82. A method for identifying an expression profile indicative of a disease or pathological state of a human subject, the method comprising:

a) applying an adhesive tape to an area of skin afflicted with the disease or pathological state in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules; and

b) applying RNA molecules from the sample, or an amplification product thereof, to a microarray to determine an expression pattern for the disease or pathological skin state sample and the unaffected sample, wherein a difference in the expression profile is indicative of an expression profile of a disease or pathological state skin.

83. The method of claim 82, wherein the disease or pathological state is dermatitis.

84. The method of claim 82, wherein the disease or pathological state is psoriasis.

85. A method for isolating an epidermal sample from skin, comprising applying an adhesive tape to a target area of the skin in a manner sufficient to isolate an epidermal sample, wherein the tape comprises a rubber adhesive, and wherein the tape is pliable, thereby isolating an epidermal sample adhering to the adhesive tape.

86. The method of claim 85, wherein the tape is a rubber-based tape.

87. The method of claim 86, wherein the tape comprises a rubber adhesive on a polyurethane film.

88. The method of claim 85, wherein the tape is applied and removed from the skin about one to ten times.

89. The method of claim 85, wherein the tape is applied and removed from the skin about one to eight times.

90. The method of claim 85, wherein the tape is applied and removed from the skin about one to five times.

91. A method for isolating a nucleic acid molecule from an epidermal sample from skin, comprising

a) applying an adhesive tape to a target area of the skin in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules, wherein the tape comprises a non-polar polymer, and wherein the tape is pliable; and

b) isolating nucleic acid molecules from the epidermal sample.

92. The method of claim 91, wherein the tape is a rubber-based tape.

93. The method of claim 92, wherein the tape comprises a rubber adhesive on a polyurethane film.

94 A non-invasive method for identifying a predictive skin marker for response to treatment for a disease or pathological state, comprising:

a) applying an adhesive tape to the skin of a subject afflicted with the disease or pathological state at a first time point, in a manner sufficient to isolate an epidermal sample comprising nucleic acid molecules;

b) treating the subject for the disease or pathological state;

d) determining whether the disease or pathological state has responded to the treatment; and

e) determining whether expression of a nucleic acid molecule in the epidermal sample is predictive of response to treatment, thereby identifying a skin marker for response to treatment.

95. The method of claim 94, wherein the disease or pathological state is psoriasis.

96. The method of claim 95, wherein the treatment is Etanercept, Clobetasol, Alefacept, or narrow band ultraviolet-B light.

97. A non-invasive method for predicting response to treatment for a disease or pathological state, comprising:

a) applying an adhesive tape to the skin of a subject afflicted with the disease or pathological state in a manner sufficient to isolate an epidermal sample comprising nucleic acid molecules;

b) detecting a target nucleic acid molecule in the epidermal sample, wherein expression of the target nucleic acid molecule is indicative of a response to treatment, thereby predicting response to treatment for the disease or pathological state.

98. The method of claim 97, wherein the disease or pathological state is psoriasis.

99. The method of claim 98, wherein the treatment is Etanercept or narrow ban ultraviolet light.

100. A method for determining the effect of an agent on skin, comprising:

a) contacting a target area of the skin with the agent;

b) applying an adhesive tape to the target area of the skin in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules; and

c) determining an expression profile for the target site of the skin, wherein the expression profile is indicative of a state of the skin, thereby determining the effect of the agent on the skin.

101. The method of claim 100, wherein the agent is a biomolecule.

102. The method of claim 100, wherein the agent is identified from a combinatorial library.

103. The method of claim 100, wherein the agent is a small organic molecule.

104. The method of claim 100, wherein the agent is a skin care product.

105. The method of claim 100, further comprising applying nucleic acid molecules from the sample or an amplification product thereof, to a microarray, prior to step d).

106. The method of claim 100, wherein the method is performed as part of a clinical trial.

107. The method of claim 100, wherein the expression profile comprises expression levels of at least 100 genes.

108. The method of claim 100, wherein the adhesive tape is applied and removed from the skin about one to ten times.

109. A method of distinguishing an irritant contact dermatitis (ICD) from an allergic contact dermatitis (ACD) in a human subject, comprising:

a) applying an adhesive tape to an area of skin afflicted with dermatitis in a manner sufficient to isolate an epidermal sample adhering to the adhesive tape, wherein the epidermal sample comprises nucleic acid molecules; and

b) determining expression levels of a gene associated with ICD or ACD, thereby distinguishing ICD with ACD.

110. The method of claim 109, wherein the isolated RNA or an amplification product thereof, is applied to a microarray to determine expression levels.

111. The method of claim 110, where expression levels of at least 10 genes are determined using the microarray, wherein a different expression level for ICD versus ACD for each of the at least 10 genes identifies skin afflicted with ICD or ACD.

112. The method of claim 111, wherein expression levels of at least 100 genes are determined using the microarray, wherein a different expression level for ICD versus ACD for each of the at least 100 genes identifies skin afflicted with ICD or ACD.

113. The method of claim 112, wherein expression levels of at least 1000 genes are determined using the microarray, wherein a different expression level for ICD versus ACD for each of the at least 1000 genes identifies skin afflicted with ICD or ACD.

114. The method of claim 109, wherein about one to ten adhesive tapes are applied and removed from the skin.

115. A kit, comprising

a) a pliable adhesive tape comprising a rubber adhesive; and

b) a probe for a biomolecule.

116. The kit of claim 115, wherein the tape comprises a rubber adhesive on a polyurethane film.

117. The kit of claim 116, wherein the polyurethane film is a 3.0 mil film.

118. The kit of claim 115, wherein the probe is part of a bioarray.

119. The kit of claim 115, wherein the probe binds a target nucleic acid molecule encoding a protein selected from TNFα, IFNγ, CD2, IL-12B, Krt-10, Krt-16, Krt-17, and IL-23A, or binds the encoded protein.